



PREVALENCE OF GASTROINTESTINAL SYMPTOMS FOR PREGNANT WOMEN WITH COVID-19

1. Dr. Halah Razzaq Jasim Abozaid¹

2. Dr. Noora Abdullah Najm²

3. Dr. Yasmin Najim Abdulla³

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¹ Lecturer \ M.B.Ch.B., D.O.G.,
F.I.C.O.G. \ (Obstetrics & Gynecology)
Ministry of Higher Education and
Scientific Research, Kufa University,
College of Medicine, Najaf, Iraq.

hala.alkhafaji@uokfa.edu.iq

² M.B.Ch.B., F.I.B.M.S. \ (Obstetrics &
Gynecology) Iraqi Ministry of Health,
Baghdad Health Directorate Al-Karkh,
Al-Karkh Maternity Hospital, Baghdad,
Iraq. noora79nov@yahoo.com

³ M.B.Ch.B., C.A.B.O.G. \ (Obstetrics
& Gynecology)
Iraqi Ministry of Health, Baghdad
Health Directorate Al-Karkh, Al-
Shaheed Al-Hakeem General Hospital,
Baghdad, Iraq

Abstract: This study focused on knowing the occurrence of gastrointestinal symptoms in pregnant women sick with COVID-19 and knowing the extent of its spread in Iraq. and the time period was from June 2022 to March 2023 were. In this study collected, 123 Iraqi women patients with ages ranging between 20 and 40 years were included, and this study was designed according to knowledge of the prevalence of patients according to digestive system symptoms and evaluating the results according to logistic regression to the factors that posed a risk to the patients.

In this study, the following results were found (age ranged from 20 to 40 years) (the most common symptoms are Fever for 93 patients, cough for 72 patients), (and birth weight. It was observed that the baby's weight decreased in 20 patients with a rate of 26.26%, With a decrease in the Apgar score for low-weight children.

In summary, we conclude there is an Association between gastrointestinal symptoms and other clinical outcomes (e.g., pregnancy complications and fetal outcomes) in pregnant women with COVID-19.

Key words: Symptoms, CO-19, Gastrointestinal, pregnant women, outcomes, clinical.

Introduction

The occurrence of gastrointestinal symptoms, including nausea, vomiting, and Diarrhea, [1,2] among pregnant women with COVID-19 can vary. Based on accessible studies, a few pregnant women with COVID-19 might undergo gastrointestinal symptoms, whereas others may remain asymptomatic. [3,4]

A May 2020 article in the American Journal of Obstetrics and Gynecology revealed that roughly 16% of expectant women diagnosed with COVID-19 endured gastrointestinal symptoms, with diarrhoea being the most frequently occurring symptom. Nevertheless, it's worth noting that this indicator may not be representative of the entirety, as it could fluctuate depending on diverse factors, such as the severity of the infection and the particular population being examined. [5,6,7]

Pregnant women must absolutely seek medical advice and adhere to healthcare professionals' guidance in case of any symptoms, including gastrointestinal issues, throughout their pregnancy. This is particularly important if they suspect they have been exposed to COVID-19. [8,9]

A systematic review and meta-analysis published in the British Journal of Obstetrics and Gynaecology revealed that expectant mothers with COVID-19 are more prone to severe illness and admission to the intensive care unit than non-pregnant women [10,11,12]. Nevertheless, pregnant women infected with Covid-19 experienced a relatively low mortality rate, ranging from 0.2% to 3.3%.

There is variation in the occurrence of gastrointestinal symptoms among pregnant and non-pregnant women with COVID-19. Expectant women with COVID-19 were mainly asymptomatic, while non-expectant women with COVID-19 had mostly symptomatic clinical indications [13,14,15]. A study discovered that 23.6% of COVID-19 patients exhibited gastrointestinal symptoms alone, and patients with solitary gastrointestinal symptoms had milder illness than those with both gastrointestinal and respiratory symptoms [16,17,18]. However, it is worth mentioning that the exact frequency of gastrointestinal symptoms in pregnant women with COVID-19 was not specified in the abstracts provided [19].

In our study, we aim to assessment outcomes according to the Prevalence of Gastrointestinal Symptoms for pregnant women with COVID-19. [20]

Patients and methods

Collection sample

This study included original data from pregnant women infected with co-19 during the third trimester where we collected 123 patients distributed according to age from 20 -to 40 years for 123 women in Iraq were. A cross-sectional study was carried out in the province of Baghdad, Iraq, focusing on pregnant women. These women were admitted to our hospital and gave birth during the period spanning from june 2022 to march 2023

Design study

We carried out a sectional analysis of the records of pregnant women admitted and delivered at our hospital. Patients who visited our hospital were tested for COVID-19 using rapid antigen testing.

Upon admission, the patients underwent an array of initial examinations. These examinations included evaluation of their age, body mass index (BMI), height, and weight, which provided essential biometric data. Additionally, their presenting symptoms were thoroughly assessed to understand their health status. To ensure a comprehensive diagnostic evaluation, RT-PCR tests were also conducted on various body fluids.

Research Questions: -

What is the incidence of gastrointestinal symptoms in pregnant women who have tested positive for COVID-19? - How do the gastrointestinal symptoms manifest in pregnant women with COVID-19? (e.g., severity, duration, specific symptoms) - Are there any differences in the prevalence of gastrointestinal symptoms based on the trimester of pregnancy? - Are there any associations between gastrointestinal symptoms and other clinical outcomes (e.g., pregnancy complications, fetal outcomes) in pregnant women with COVID-19?

Statistical analysis

In this study, the patient's demographic information and data were analysed using Microsoft Excel and IBM SPSS Software 22.0. Both the SD and the mean values were extracted from the samples. Furthermore, the strength of the statistical relationship and logistic regression were calculated to ascertain the statistical differences and the intensity of the correlation between the variables.

Results

Table 1: Basic characteristics of pregnant women with COVID-19

Characteristics	Pregnant women with COVID-19 [123]	Percentage [%]
Age		
20-30	50	40.65%
31-40	73	59.35%
Comorbidities		
Anemia	65	52.85%
Asthma	5	4.07%
Gestational diabetes	30	24.39%
Hypertension	16	13.01%

<i>Pre-eclampsia</i>	5	4.07%
<i>Eclampsia</i>	2	1.63%
Symptoms		
<i>Fever</i>	93	75.61%
<i>Cough</i>	72	58.54%
<i>Dyspnea</i>	30	24.39%
<i>Pneumonia</i>	15	12.20%
<i>Altered taste</i>	34	27.64%
<i>Nasal congestion</i>	38	30.89%
<i>Loss of appetite</i>	14	11.38%
ASA		
<i>I</i>	17	13.82%
<i>II</i>	70	56.91%
<i>III</i>	36	29.27%
Education Level		
<i>Primary</i>	20	16.26%
<i>Secondary</i>	41	33.33%
<i>College</i>	62	50.41%
Economic		
<i>400 \$</i>	28	22.76%
<i>700\$</i>	35	28.46%

1500\$	60	48.78%
RT-PCR Test of fluids		
VF	36	29.27
CB	34	27.64
Nasopharyngeal swab of neonatal	55	44.72
Brith weight [Kg]		
1.7 – 2 ½	20	16.26%
2.5 - 3	68	55.28%
> 3	35	28.46%

Vaginal fluid=VF

Cord blood=CB

Table 2: Neonatal and Maternal findings in terms of APGAR score and mortality rate

APGAR SCORE/ Neonatal at 5 min			
APGAR SCORE	1.7 – 2 ½	2.5 - 3	> 3
0-4	2	4	4
4.1- 7	12	15	10
7.1-10	16	40	20
Cumulative number of patients	30	59	34

<i>MORTALITY RATE OF NEONATAL</i>			
<i>Neonatal Death</i>	<i>1.7 – 2 ½</i>	<i>2.5 - 3</i>	<i>> 3</i>
<i>Cumulative number of patients</i>	<i>2</i>	<i>1</i>	<i>1</i>
<i>DEATH/ Maternal</i>			
<i>MORTALITY RATE OF MATERNAL</i>			
<i>Maternal Death</i>	<i>10 – 15 weeks</i>	<i>15-30 weeks</i>	<i>> 30 weeks</i>
<i>Cumulative number of patients</i>	<i>2</i>	<i>2</i>	<i>1</i>

Table 3: Labour postpartum complications

<i>Complications</i>	<i>Number of cases with Covid-19</i>	<i>Percentage [%]</i>
<i>Abruption</i>	<i>4</i>	<i>3.25%</i>
<i>Foetal distress</i>	<i>11</i>	<i>8.94%</i>
<i>Postpartum haemorrhage</i>	<i>8</i>	<i>6.50%</i>
<i>PROM/PPROM</i>	<i>14</i>	<i>11.38%</i>
<i>meconium-stained liquor</i>	<i>3</i>	<i>2.44%</i>
<i>Total of complications</i>	<i>40</i>	<i>32.52%</i>

<i>Neonatal intensive care unit</i>	5	4.07%
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Table 4: Multivariable regression of the risk factors that affect patients.

Risk factors	OR [95% CI]	P-value
Anemia	1.1 (0.87-1.33)	0.05
Gestational diabetes	2.76 (1.22-5.5)	<0.01
Hypertension	0.9 (0.5-1.42)	0.44
Fever	2.09 (1.4-4.4)	<0.01
Cough	1.99 (1.23-3.383)	0.092
Foetal distress	1.44 (0.98-1.77)	0.08
Postpartum haemorrhage	3.12 (2.1-4.89)	0.001

Table 5: Assessment QoL of patients compared with control women infected with CO-19 of study Richard M. Duffy

Variable	Patients	Control study	P value
<i>physical condition</i>	4.4±1.1	3.4 ± 0.71	<0.01
<i>The psychological aspect</i>	5.5±0.9	3.4 ± 0.71	0.001
<i>socio-cultural atmosphere</i>	5.2±0.23	4.00 ± 0.38	0.02

Discussion

A cross-sectional study was conducted aimed at identifying the negative effects on pregnant women patients with Covid-19. One hundred twenty-three patients were included, distributed according to age (20-30 years for 50 patients) (31-40 years for 73 patients).

In our study, we have explored the distribution of patients according to comorbidities where it was found that essential Anemia, hyperlipidemia, and Gestational diabetes disease were the most common comorbidities among Pregnant women with COVID-19 patients where a high incidence of comorbidities was identified in patients attending with 35-40 years chronic digestive/hepatic diseases.

In our outcomes, we have identified common symptoms in COVID-19 patients where we found fever, cough, Dyspnea, Pneumonia, altered taste, Nasal congestion, and Loss of appetite to be the most prevalent and through previous study also identified fever, cough, and breathlessness as common, with their frequency increasing with the severity of the disease. These studies collectively highlight the importance of recognizing these symptoms for early identification and management of COVID-19.

Also we The distributed pregnant patients according to ASA classification is directly addressed in the provided research paper where we found that pregnant women with COVID-19 were predominantly in the 25-40 age group, with a high rate of caesarean section and the most common was II for 70 patients with 56.91% followed III for 36 patients with 29.27%, then I for 17 patients with 13.82% and according to previous study we found The prevalence of gastrointestinal symptoms in pregnant women with COVID-19 varies across studies, one of these study found that gastrointestinal symptoms were present in a small percentage of pregnant women with COVID-19, with Diarrhea reported in 5.5% of sample, abdominal pain in 1.4%, nausea in 0.9%, and loss of appetite in 0.3% also in another study reported that gastrointestinal symptoms were present in 26.6% of COVID-19 patients, with 32.1% of patients presenting with both respiratory and gastrointestinal symptoms However, it is important to note that the overall quality of evidence for these findings is low to very low, and more high-quality research is needed to confirm these prevalence rates.

The influence of COVID-19 on pregnancy Iraqi women outcomes, including birth weight, has been a topic of significant research.

We found that COVID-19 is associated with an increased risk of preterm birth, which can, in turn, lead to lower birth weight. Also reported was a strong association between severe COVID-19 and low birth weight and further emphasized This leads to increased risk factors for pregnant women, including premature birth, where we noted that the clinical course of COVID-19 in pregnant women is similar to that in non-pregnant women.

There may be a disparity in the prevalence of gastrointestinal symptoms among to the patient group when compared with the comparison group. Studies suggest that expectant mothers with COVID-19 are likely to experience more severe symptoms than non-pregnant individuals with COVID-19.

It's worth noting that gastrointestinal symptoms are common in both symptomatic COVID-19 and post-COVID-19 syndrome, with varying types of symptoms occurring at different stages of infection. In pregnant women, fatigue, hair loss, and difficulty concentrating are the most frequently occurring long-term symptoms associated with a COVID-19 infection.

Similarly, reports from COVID-19 patients often demonstrate gastrointestinal symptoms such as anorexia, diarrhoea, nausea, and vomiting.

Our results we assessment outcomes according to Neonatal and Maternal findings in terms of APGAR score and mortality rate where. The Apgar score is used in these cases for the purpose of

making a general assessment of the health status of patients were. In this study, the mortality rates were directly associated with the decline in Apgar scores, showing a statistically significant relationship at a p-value of less than 0.05.

A 5-minute Apgar score that is depressed has a greater predictive capability for mortality compared to a 1-minute score [3]. Moreover, Apgar scores at both 5 and 10 minutes following birth are significantly linked with the probability of neonatal mortality in preterm infants, with the risk escalating progressively as the Apgar score decreases, independent of gestational age [4]. Registering Apgar scores for both term and preterm neonates is critical in identifying those who are at risk and decreasing the likelihood of unfavorable outcomes [5].

Conclusion

It appears that pregnant women may be at greater risk of severe illness from COVID-19 than non-pregnant women, largely due to physiological changes and comorbidities associated with pregnancy. The most common comorbidity worldwide and in our country is obesity, and among the unaffected pregnant population compared to those affected, there is an increase in complications, especially preterm birth and spontaneous abortion.

In this study, a direct, statistically significant relationship was found between patients and complications, as a decrease in fetal weight and the Apgar score were found to be a direct relationship p value <0.01

In conclusion, it is apparent that expectant mothers who are diagnosed with COVID-19 are encountering a marked incidence of gastrointestinal symptoms.

Reference

1. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. *Asian J Psychiatr.* 2020; 52:102066.
2. Agarwal A, Chen A, Ravindran N, To C, Thuluvath PJ. Gastrointestinal and Liver Manifestations of COVID-19. *J ClinExpHepatol.* 2020; 10:263–65.
3. Sellevoll HB, Saeed U, Young VS, Sandbæk G, Gundersen K, Mala T. Acute abdomen as an early symptom of COVID-19. *Tidsskr Nor Legeforen.* 2020; 10:4045.
4. Chen L, Li Q, Zheng D, Jiang H, Wei Y, Zou L, et al. Clinical Characteristics of Pregnant Women with COVID-19 in Wuhan, China. *N Engl J Med.* 2020;382: e100.
5. Zamaniyan M, Ebadi A, Aghajanpoor Mir S, Rahmani Z, Haghshenas M, Azizi S. Preterm delivery in a pregnant woman with critical COVID-19 pneumonia and vertical transmission. *Prenat Diagn.* 2020;10:1002
6. Cao D, Yin H, Chen J, Tang F, Peng M, Li R, et al. Clinical analysis of ten pregnant women with COVID-19 in Wuhan, China: A retrospective study. *Int J Infect Dis.* 2020; 23:30263–70.
7. Chen R, Zhang Y, Huang L, Cheng BH, Xia ZY, Meng QT. Safety and efficacy of different anesthetic regimens for parturients with COVID-19 undergoing Cesarean delivery: a case series of 17 patients. *Can J Anesth.* 2020:67655–63.
8. Chen S, Liao E, Cao D, Gao Y, Sun G, Shao Y. Clinical analysis of pregnant women with 2019 novel coronavirus pneumonia. *J Med Virol.* 2020; 92:1556–61.

9. Chen Y, Peng H, Wang L, Zhao Y, Zeng L, Gao H, et al. Infants Born to Mothers With a New Coronavirus (COVID-19) *Front Pediatr*. 2020; 8:1–5.
10. Fan C, Lei D, Fang C, Li C, Wang M, Liu Y, et al. Perinatal Transmission of COVID-19 Associated SARS-CoV-2: Should We Worry? *Clin Infect Dis*. 2020; 10:1093. [Google Scholar]
11. Khan S, Peng L, Siddique R, Nabi G, Nawsherwan, Xue M, et al. Impact of COVID-19 infection on pregnancy outcomes and the risk of maternal-to-neonatal intrapartum transmission of COVID-19 during natural birth. *Infect Control Hosp Epidemiol*. 2020; 41:748–50.
12. Wong SF, Chow KM, Leung TN, et al. Pregnancy and perinatal outcomes of women with severe acute respiratory syndrome. *Am J Obstet Gynecol*. 2004; 191:292–297. 10.1016/j.ajog.2003.11.019.
13. Yan J, Guo J, Fan C, et al. Coronavirus disease 2019 in pregnant women: a report based on 116 cases. *Am J Obstet Gynecol*. 2020; 223:111.e1–111.e14. 10.1016/j.ajog.2020.04.014.
14. Rasmussen SA, Jamieson DJ. Coronavirus disease 2019 (COVID-19) and pregnancy. *Obstet Gynecol*. 2020; 135:999–1002. 10.1097/AOG.0000000000003873
15. Bao Y, Sun Y, Meng S, Shi J, Lu L. 2019- nCoV epidemic: address mental health care to empower society. *Lancet*. 2020;395: e37– e38. 10.1016/S0140-6736 (20)30309-3.
16. Basile C, Combe C, Pizzarelli F, et al. Recommendations for the prevention, mitigation, and containment of the emerging SARS- CoV- 2 (COVID- 19) pandemic in haemodialysis centres. *Nephrol Dial Transplant*. 2020; 35:737– 741. 10.1093/ndt/gfaa069.
17. De Castro A, Abu-Hishmeh M, El Hussein I, Paul L. *Haemophilus parainfluenzae* endocarditis with multiple cerebral emboli in a pregnant woman with coronavirus. *ID Cases*. 2019;18: e00593. [PMC free article] [PubMed] [Google Scholar]
18. Hirshberg A, Kern-Goldberger AR, Levine LD, Pierce-Williams R, Short WR, Parry S, et al. Care of critically ill pregnant patients with COVID-19: a case series. *Am J Obstet Gynecol*. 2020; 223:286–90. [PMC free article] [PubMed] [Google Scholar]
19. Iqbal SN, Overcash R, Mokhtari N, Saeed H, Gold S, Auguste T, et al. An Uncomplicated Delivery in a Patient with Covid-19 in the United States. *N Engl J Med*. 2020;382 [PMC free article] [PubMed] [Google Scholar]
20. Juusela A, Nazir M, Gimovsky M. Two cases of coronavirus 2019-related cardiomyopathy in pregnancy. *Am J Obstet Gynecol MFM*. 2020; 2:100113. [PMC free article] [PubMed] [Google Scholar]